

REMARKS/ARGUMENTS

Status of Application

Claims 1-42 and 44-78 are pending. In the course of preparing this Amendment, Applicants discovered that the application as filed did not contain a claim 43. None of the permitted status identifiers address this possibility. Therefore, in order to preserve the integrity of the claim listing, claim 43 appears in the listing above as having been canceled.

Claims 1-8 and 10-64 (including the phantom claim 43) have been allowed; claim 9 has been objected to as informal; and claim 65 has been rejected for same-invention double-patenting. Applicants have

- amended claim 9 along the lines suggested by the Examiner;
- amended claims 10, 18, 20, 39, 42, 50, and 55 to address other minor informalities (e.g., no period or two periods at end of claim)
- amended claims 28 and 29, formerly dependent from claim 27, to depend from claim 1 so as to cure a possible inconsistency with claim 27;
- amended claim 65 in a manner that differentiates it from claim 1 of U.S. Patent No. 6,587,814; and
- added claims 66-78, which will be discussed below.

Introduction

Applicants wish to take this opportunity to put this application in context with other members of the family (all applications claiming priority from U.S. Patent Application No. 60/151,020, filed August 27, 1999). In particular, Applicants will discuss the relationship of various embodiments and claims in this CIP to the embodiments and claims in the other family members. The issue is the possible prior art effect of the published PCT application vis-à-vis some of the claims in this CIP.

Applicants are not making any representations as to which claims are entitled to the filing date of the provisional application from which all the family members claim priority

since that is irrelevant to the present discussion. What is relevant is which claims are entitled to the filing date of the issued grandparent.

Overview and Status of the Family Members

This application is the fourth in a series of U.S. applications, which are related as follows:

- This application is a continuation-in-part of
- U.S. Patent Application No. 10/429,170, filed May 1, 2003 (“the parent”), which is a continuation of
- U.S. Patent Application No. 09/643,705, filed August 21, 2000, now U.S. Patent No. 6,587,814 (“the grandparent”), which claims priority from
- Provisional U.S. Patent Application No. 60/151,020, filed August 27, 1999.

A PCT application is based on the grandparent, and entered the national phase in Europe and Japan.

The U.S. and PCT family members are set forth in the following table (the European and Japanese applications filed in the national phase of the listed PCT application do not present any issues distinct from possible issues presented by the PCT application):

Filing Date	Application No.	Publication Date	Publication No.	Docket No.
08/27/1999	60/151,020	N/A	N/A	017032-000500US
08/21/2000	09/643,705	07/01/2003	USP 6,587,814	017032-000510US
08/24/2000	PCT/US00/23333	03/08/2001	WO 01/17103	017032-000510PC
05/01/2003	10/429,170			017032-000520US
10/20/2003	10/690,470	10/20/2003	20040158440	017032-000511US

Application No. 10/429,170 (the parent) is currently on final rejection, with some claims allowed and some rejected for obviousness-type double-patenting in view of U.S. Patent No. 6,587,814 (the grandparent).

Most of the claims in this application are allowed with claim 65 rejected for same-invention double-patenting in view of U.S. Patent No. 6,587,814.

Possible Effects of the Published PCT Application

PCT App. No. PCT/US00/23333 published 03/08/2001, which is more than one year before the filing dates of the parent and this application. Since the parent is a continuation of the grandparent, namely App. No. 09/643,705, filed August 21, 2000, the published PCT application cannot act as prior art against the parent.

This application is a CIP, and therefore claims that could not have been made in the parent or grandparent are entitled to the October 20, 2003 filing date, and the published PCT application (published March 8, 2001) could be considered to be prior art with respect to those claims only.

Differences between the CIP and the Grandparent

Both the CIP and the grandparent describe generally the same broad invention. The CIP added a number of embodiments, and block diagrams of some of the added embodiments are shown in FIGS. 9A-9E.

As described in both the grandparent and the CIP, an input signal is subjected to filtering and/or delaying operations that provide secondary signals derived from the input signal that have prescribed time relationships to one other (i.e., a defined time correlation). As stated in paragraphs [0030] and [0031], there are two sets of implementations.

In the first set of implementations, described in paragraph [0030], the correlated filter values are captured and a weighted sum is formed as a measure of the input pulse's integrated area. In the second set of implementations, described in paragraph [0031], a continuous weighted sum of the filter values is formed and then a single value of this composite signal is captured as the desired measure of the input pulse's integrated area.

The first set of implementations was the subject of the grandparent, while the second set of implementations were added in the CIP. In both sets of implementations, a set of secondary signals is generated by directing the primary signal along a plurality of signal paths, a filtering or delay operation is performed in at least one signal path, and weighting, capturing, and summing operations are performed.

In the embodiment described in the grandparent, the secondary signals in the plurality of signal paths are subjected to filtering and/or delay to establish the defined time correlation, after which the secondary signals (as captured) are weighted and summed.

At a certain point, as reflected in the CIP, it was recognized that the order of weighting and filtering/delaying could be changed and that in at least some instances the order of summing and capturing could be changed and weighting and capturing could be changed. Further, as shown in FIG. 9D, summing the weighted secondary signals did not have to be done at a single summation point.

Effective Filing Dates for Claims

Independent method claims 1 and 58, and independent apparatus claim 59 are intended to be generic to all the illustrated embodiments, and as such cover the embodiments disclosed and claimed in the issued grandparent (09/643,705) and the parent (10/429,170). Accordingly, these independent claims are believed to be supported by the grandparent and parent, and are entitled to an effective filing date that predates the PCT publication.

Many of the dependent claims are also believed supported by the issued grandparent, and therefore entitled to an effective filing date that predates the PCT publication. There are, however, a number of the dependent claims to embodiments that were not disclosed in the grandparent.

It is believed that the following dependent claims are drawn to features that were first introduced in the CIP:

3, 4, 6, 9, 10, 13, 14, 20, 21, 22, 24, 26, 33, 34, 38, 39, 55², 56, 57, 61, 62, and 64.

² In analyzing the claims in this CIP vis-à-vis the specification and claims in the grandparent, Applicants discovered that they had unintentionally added new matter to the continuation in the Supplemental Preliminary Amendment in the continuation. More specifically, claims 101, 102, and 103, added in the Amendment, recite scintillator material, which is not described in the grandparent or the parent. This was an error without deceptive intent, for which Applicants apologize.

Amended Claim 65 and New Claims 66-78

This Amendment adds claims 66-78, which correspond to the claims in the parent (as amended or added) as follows:

- Dependent claim 66 is the same as claim 2 in the parent;
- Independent claim 67 is the same as claim 56 in the parent;
- Dependent claims 68 and 69 are the same as claims 57 and 58 in the parent;
- Independent claim 70 is the same as claim 63 in the parent; and
- Dependent claims 71-78 are the same as claims 64, 65, 69, 70, 72, 73, 84, and 85 in the parent.

Independent claims 56 and 63, were allowed in the continuation, and claim 65, which corresponds to claim 1 in the issued grandparent is being amended to correspond to claim 1, as amended in the continuation.

Independent claims 65, 67, and 70, and their respective dependent claims, are believed to be entitled to the grandparent's filing date, and are unaffected by the published PCT application.

Since claim 1 was rejected for obviousness-type double-patenting over the grandparent in the parent, Applicants are submitting a Terminal Disclaimer to obviate the rejection that the Examiner would make in this case were the Terminal Disclaimer not being filed. The Terminal Disclaimer also addresses any other obviousness-type double-patenting raised by this Amendment.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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